

## **PRELIMINARY NRC PERSPECTIVES OF THE BFNP FIRE PROTECTION PROGRAM**

- Objectives
- Background
- The Current Issues
- Success Paths (staff views)
- Next Steps

Phil Qualls, Fire Protection Engineer, NRC/NRR/DRA/AFP

## Objectives:

- Share NRC perspectives of the BFNP1 Fire Protection Program as one of the reasons for initially requesting the meeting was to make the licensee aware of preliminary NRC fire protection program concerns and allow the licensee an opportunity to clarify issues and provide additional information.
- Make observations on BFNP2 and 3 program
- Receive TVA perspectives
- Discuss staff views of multiple success paths
- Discuss next steps

## **BACKGROUND**

- BFNP units 1,2,& 3 licensed to operate 1974, 1975, 1977 respectively
- 1975 fire at BFNP affecting Units 1 and 2.
- January 1, 1980 the Fire Protection Rule (10 CFR 50.48) became effective.
- This rule backfit Section III.G to all pre-1979 licensees
- Staff search revealed no documents showing a program accepted for BFNP with Unit 1 operating.
- This licensee has the standard fire protection license condition as outlined in GL 86-10 and implemented by GL 88-12.

## ISSUES

- The current “approved fire protection program” for Units 2 and 3 are based on a SE which approves operation of Units 2 and 3 with Unit 1 shutdown and defueled.
- Licensee submittals for Units 2 and 3 state that numerous fire areas (FA) contain no redundant SSD trains as would require III.G.2 separation (documented in 12/88 SER). Conversations with Regional personnel indicate that numerous operator manual actions (OMA) may have been used by the licensee in lieu of Appendix R, Section III.G separation criteria. Possible miscommunication because some BWR fire areas (e.g. reactor building) generally do contain redundant trains of equipment. (Potential inspection item)
- Units 2 and 3 may be currently operating in noncompliance (with Section III.G.2) due to the use of OMA.
- No exemptions were requested or approved for III.G.2 manual actions
- The licensee intends to implement this program for Unit 1 using OMA.
- The analysis appears to be based on assuming a slowly developing fire which allows response to one spurious actuation at a time (Section 3.5). This is contrary to regulatory requirements. The use of this assumption, when determining protection requirements and procedural requirements could result in failure to achieve SSD in the event of a fire.
- The success paths in the analysis appear to rely on interlock performance (not fire damaged) with no discussion of potential effects of fire induced transient events induced by control circuitry. Examples include:
  - Assumption of single SRV opening
  - RHR min flow valve not remaining closed upon pump spurious start.

The lack of consideration of more than one cable fault could result in other interlock affects on the SSD analysis. This does not appear to meet NRC regulations. This issue may be a result of the prior assumption of a single spurious actuation.

## Possible Success Paths (staff view)

1. The use of the allowance in the operating license to make changes to the approved FPP that do not adversely affect safe shutdown.

The licensee could make this change if they determine that no adverse affect on safe shutdown results from the change in the approved FPP. The licensee would be at risk if the planned NRC inspection results in findings that the change was adverse to SSD. At a minimum, to avoid an “adverse change” the licensee would need to

- Review the current program to ensure compliance with NRC regulations, especially Appendix R, Section III.G concerning manual actions and all circuit analysis assumptions.
  - The licensee would then document non-conformances and implement adequate compensatory measures to ensure an adequate level of plant safety.
  - Enforcement discretion applies. The licensee would then have the time allowed by the enforcement discretion to complete corrective actions and to obtain exemptions.
2. The licensee could submit a fire protection program to the staff for review and approval prior to Unit 1 restart. This program would need to document compliance with NRC regulations and request any necessary exemptions.
  3. The licensee could commit to an NFPA 805 risk informed-performance based fire protection program.
  4. The licensee may have other suggestions which the staff has not considered.